SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> POLYNUCLEOTIDES ENCODING A NOVEL GLYCINE RECEPTOR ALPHA SUBUNIT EXPRESSED IN THE GASTROINTESTINAL TRACT, HGRA4, and SPLICE VARIANT THEREOF

<130> D0079 NP

<150> US 60/269,535
<151> 2001-02-16

<160> 81

<170> PatentIn version 3.0

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ctg cca ggg cag gtc ctc ctc agg gtg gcc ttg gca aaa gag gaa gtc       96
Leu Pro Gly Gln Val Leu Leu Arg Val Ala Leu Ala Lys Glu Glu Val
            20                  25                  30

aaa tct gga acc aag ggg tcc cag ccc atg tcc ccc tct gat ttc cta      144
Lys Ser Gly Thr Lys Gly Ser Gln Pro Met Ser Pro Ser Asp Phe Leu
        35                  40                  45

gac aaa ctt atg ggg cga aca tct gga tat gat gcc agg att cgg ccc      192
Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
    50                  55                  60

aat ttt aaa ggc cca ccc gtg aac gtg acc tgc aac atc ttc atc aac      240
Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
65                  70                  75                  80

agt ttc agc tcc gtc acc aag acc aca atg gac tac cgg gtg aat gtc      288
Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp Tyr Arg Val Asn Val
                85                  90                  95

ttc ttg cgg caa cag tgg aat gac cca cgc ctg tcc tac cga gaa tat      336
Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr
            100                 105                 110

cct gat gac tct ctg gac ctc gat ccc tcc atg ctg gac tct atc tgg      384
Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
        115                 120                 125
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aag cca gac ctc ttc ttt gct aat gag aaa ggg gcc aac ttc cat gag      432
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gtg acc acg gac aac aag tta ctg cgc atc ttc aag aat ggg aat gtg      480
Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val
145                 150                 155                 160

ctg tac agc atc agg ctg acc ctc att ttg tcc tgc ctg atg gac ctc      528
Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser Cys Leu Met Asp Leu
                165                 170                 175

aag aac ttc ccc atg gac atc cag acc tgc acg atg cag ctt gag agc      576
Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr Met Gln Leu Glu Ser
            180                 185                 190

ttt ggc tac acc atg aaa gac ctc gtg ttt gag tgg ctg gaa gat gct      624
Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu Glu Asp Ala
        195                 200                 205

cct gct gtc caa gtg gct gag ggg ctg act ctg ccc cag ttt atc ttg      672
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cgg gat gag aag gat cta ggc tgt tgt acc aag cac tac aac aca ggg      720
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225                 230                 235                 240

aaa ttc acc tgc atc gag gta aag ttt cac ctg gaa cgg cag atg ggc      768
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tac tat ctg att cag atg tac atc ccc agc cta ctc atc gtc atc ctg      816
Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu
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tcc tgg gtc tcc ttc tgg atc aac atg gat gct gcc cct gcc cgt gtg      864
Ser Trp Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val
        275                 280                 285

ggc ctg ggc atc acc acc gtg ctc acc atg acc acc cag agc tct ggc      912
Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly
    290                 295                 300

tcc cgg gcc tct ttg cct aag gtg tcc tac gtg aag gca atc gac atc      960
Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile
305                 310                 315                 320

tgg atg gct gtg tgt ctg ctc ttt gtg ttc gct gcc ttg ctg gag tat     1008
Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr
                325                 330                 335

gct gcc ata aat ttt gtt tct cgt cag cat aaa gaa ttc ata cga ctt     1056
Ala Ala Ile Asn Phe Val Ser Arg Gln His Lys Glu Phe Ile Arg Leu
            340                 345                 350
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cga aga agg cag agg cgc caa cgc ttg gag gaa gat atc atc caa gaa     1104
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        355                 360                 365

agt cgt ttc tat ttc cgt ggc tat ggc ttg ggc cac tgc ctg cag gca     1152
Ser Arg Phe Tyr Phe Arg Gly Tyr Gly Leu Gly His Cys Leu Gln Ala
    370                 375                 380

aga gat gga ggt cca atg gaa ggt tct ggc att tat agt ccc caa cct     1200
Arg Asp Gly Gly Pro Met Glu Gly Ser Gly Ile Tyr Ser Pro Gln Pro
385                 390                 395                 400

cca gcc cct ctt cta agg gaa gga gaa acc acg cgg aaa ctc tac gtg     1248
Pro Ala Pro Leu Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val
                405                 410                 415

gac tgagccaaga gaattgacac catctcccgg gctgtcttcc ctttcacttt          1301
Asp
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cctcatcttc aatatcttct actgggttgt ctataaagtg ctacggtcag aagatatcca   1361

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tcccactcag aacttcaact accagtccca aagctatgtg ggcctatatt gcatggtgcc   1541

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cgactatatg gcccaacaga gaggtgttca agtctcttgg gaagccccac actttgtctt   2021

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aacattctgg tctcagaaat attcgttccg ttccctaatt aactagcatg gtggcaggat   2261

ctgttggaca gctggggagt gtaaaaaaag aaaaatactt gttctttaag aaacttactt   2321

tatgatgcta gaaaactttt gagaaaagtg agatccaagg tagtggaacc caggaggagt   2381

agaatagaga aactattctc agagtgtctt ttgttggctg ggctttcatt tgtttcttct   2441
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aaaa 2565

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35 40 45

Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
50 55 60

Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
65 70 75 80

Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp Tyr Arg Val Asn Val
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Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr
100 105 110

Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
115 120 125

Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu
130 135 140

Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val
145 150 155 160

Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser Cys Leu Met Asp Leu
165 170 175

Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr Met Gln Leu Glu Ser
180 185 190

Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu Glu Asp Ala
195 200 205

Pro Ala Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu
210 215 220

Arg Asp Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr Asn Thr Gly
225 230 235 240

Lys Phe Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly
245 250 255

Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu
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Ser Trp Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val
275 280 285

Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly
290 295 300

Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile
305 310 315 320

Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr
325 330 335

Ala Ala Ile Asn Phe Val Ser Arg Gln His Lys Glu Phe Ile Arg Leu
340 345 350

Arg Arg Arg Gln Arg Arg Gln Arg Leu Glu Glu Asp Ile Ile Gln Glu
355 360 365

Ser Arg Phe Tyr Phe Arg Gly Tyr Gly Leu Gly His Cys Leu Gln Ala
370 375 380

Arg Asp Gly Gly Pro Met Glu Gly Ser Gly Ile Tyr Ser Pro Gln Pro
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1               5                   10                  15

ctg cca ggg cag gtc ctc ctc agg gtg gcc ttg gca aaa gag gaa gtc      96
Leu Pro Gly Gln Val Leu Leu Arg Val Ala Leu Ala Lys Glu Glu Val
            20                  25                  30

aaa tct gga acc aag ggg tcc cag ccc atg tcc ccc tct gat ttc cta     144
Lys Ser Gly Thr Lys Gly Ser Gln Pro Met Ser Pro Ser Asp Phe Leu
        35                  40                  45

gac aaa ctt atg ggg cga aca tct gga tat gat gcc agg att cgg ccc     192
Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
    50                  55                  60

aat ttt aaa ggc cca ccc gtg aac gtg acc tgc aac atc ttc atc aac     240
Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
65              70                  75                  80

agt ttc agc tcc gtc acc aag acc aca atg gac tac cgg gtg aat gtc     288
Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp Tyr Arg Val Asn Val
                85                  90                  95

ttc ttg cgg caa cag tgg aat gac cca cgc ctg tcc tac cga gaa tat     336
Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr
            100                 105                 110

cct gat gac tct ctg gac ctc gat ccc tcc atg ctg gac tct atc tgg     384
Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
        115                 120                 125

aag cca gac ctc ttc ttt gct aat gag aaa ggg gcc aac ttc cat gag     432
Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu
    130                 135                 140

gtg acc acg gac aac aag tta ctg cgc atc ttc aag aat ggg aat gtg     480
Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val
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145                 150                 155                 160

ctg tac agc atc agg ctg acc ctc att ttg tcc tgc ctg atg gac ctc      528
Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser Cys Leu Met Asp Leu
                165                 170                 175

aag aac ttc ccc atg gac atc cag acg tgc acg atg cag ctt gag agc      576
Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr Met Gln Leu Glu Ser
            180                 185                 190

tca tcc ata ctc tgc agc cct ctg cca tct ctg tca ctt tca gtt ggc      624
Ser Ser Ile Leu Cys Ser Pro Leu Pro Ser Leu Ser Leu Ser Val Gly
        195                 200                 205

tac acc atg aaa gac ctc gtg ttt gag tgg ctg gaa gat gct cct gct      672
Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu Glu Asp Ala Pro Ala
    210                 215                 220

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Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu Arg Asp
225                 230                 235                 240

gag aag gat cta ggc tgt tgt acc aag cac tac aac aca ggg aaa ttc      768
Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr Asn Thr Gly Lys Phe
                245                 250                 255

acc tgc atc gag gta aag ttt cac ctg gaa cgg cag atg ggc tac tat      816
Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly Tyr Tyr
            260                 265                 270

ctg att cag atg tac atc ccc agc cta ctc atc gtc atc ctg tcc tgg      864
Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp
        275                 280                 285

gtc tcc ttc tgg atc aac atg gat gct gcc cct gcc cgt gtg ggc ctg      912
Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Gly Leu
    290                 295                 300

ggc atc acc acc gtg ctc acc atg acc acc cag agc tct ggc tcc cgg      960
Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser Arg
305                 310                 315                 320

gcc tct ttg cct aag gtg tcc tac gtg aag gca atc gac atc tgg atg     1008
Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp Met
                325                 330                 335

gct gtg tgt ctg ctc ttt gtg ttc gct gcc ttg ctg gag tat gct gcc     1056
Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr Ala Ala
            340                 345                 350

ata aat ttt gtt tct cgt cag cat aaa gaa ttc ata cga ctt cga aga     1104
Ile Asn Phe Val Ser Arg Gln His Lys Glu Phe Ile Arg Leu Arg Arg
        355                 360                 365

agg cag agg cgc caa cgc ttg gag gaa gat atc atc caa gaa agt cgt     1152
Arg Gln Arg Arg Gln Arg Leu Glu Glu Asp Ile Ile Gln Glu Ser Arg
    370                 375                 380
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ttc tat ttc cgt ggc tat ggc ttg ggc cac tgc ctg cag gca aga gat     1200
Phe Tyr Phe Arg Gly Tyr Gly Leu Gly His Cys Leu Gln Ala Arg Asp
385                 390                 395                 400

gga ggt cca atg gaa ggt tct ggc att tat agt ccc caa cct cca gcc     1248
Gly Gly Pro Met Glu Gly Ser Gly Ile Tyr Ser Pro Gln Pro Pro Ala
                405                 410                 415

cct ctt cta agg gaa gga gaa acc acg cgg aaa ctc tac gtg gac         1293
Pro Leu Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
            420                 425                 430

tgagccaaga gaattgacac catctcccgg gctgtcttcc ctttcacttt cctcatcttc   1353

aatatcttct actgggttgt ctataaagtg ctatggtcag aagatatcca ccaggctctg   1413

tgaatagggt gggagctata gagtcctgct gctggcctcc tgcttcctcc tgggtgggct   1473

ttctccctca gttagactcc attaggggtt tggacagttc cttcctgatc tcccactcag   1533

aacttcaact accagtccca aagctatgtg ggcctatatt gcatggtgcc aatggtggct   1593

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Lys Ser Gly Thr Lys Gly Ser Gln Pro Met Ser Pro Ser Asp Phe Leu
        35                  40                  45

Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
    50                  55                  60

Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
65                  70                  75                  80

Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp Tyr Arg Val Asn Val
                85                  90                  95
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Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr
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Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
115 120 125

Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu
130 135 140

Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val
145 150 155 160

Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser Cys Leu Met Asp Leu
165 170 175

Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr Met Gln Leu Glu Ser
180 185 190

Ser Ser Ile Leu Cys Ser Pro Leu Pro Ser Leu Ser Leu Ser Val Gly
195 200 205

Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu Glu Asp Ala Pro Ala
210 215 220

Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu Arg Asp
225 230 235 240

Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr Asn Thr Gly Lys Phe
245 250 255

Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly Tyr Tyr
260 265 270

Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp
275 280 285

Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Gly Leu
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Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser Arg
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Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp Met

325 330 335

Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr Ala Ala
340 345 350

Ile Asn Phe Val Ser Arg Gln His Lys Glu Phe Ile Arg Leu Arg Arg
355 360 365

Arg Gln Arg Arg Gln Arg Leu Glu Glu Asp Ile Ile Gln Glu Ser Arg
370 375 380

Phe Tyr Phe Arg Gly Tyr Gly Leu Gly His Cys Leu Gln Ala Arg Asp
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Val Asn Val Ser Cys Asn Ile Phe Ile Asn Ser Phe Gly Ser Ile Ala
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Glu Thr Thr Met Asp Tyr Arg Val Asn Ile Phe Leu Arg Gln Gln Trp
85 90 95

Asn Asp Pro Arg Leu Ala Tyr Asn Glu Tyr Pro Asp Asp Ser Leu Asp
100 105 110

Leu Asp Pro Ser Met Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe
115 120 125

Ala Asn Glu Lys Gly Ala His Phe His Glu Ile Thr Thr Asp Asn Lys
130 135 140

Leu Leu Arg Ile Ser Arg Asn Gly Asn Val Leu Tyr Ser Ile Arg Ile
145 150 155 160

Thr Leu Thr Leu Ala Cys Pro Met Asp Leu Lys Asn Phe Pro Met Asp
165 170 175

Val Gln Thr Cys Ile Met Gln Leu Glu Ser Phe Gly Tyr Thr Met Asn
180 185 190

Asp Leu Ile Phe Glu Trp Gln Glu Gln Gly Ala Val Gln Val Ala Asp
195 200 205

Gly Leu Thr Leu Pro Gln Phe Ile Leu Lys Glu Glu Lys Asp Leu Arg
210 215 220

Tyr Cys Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu Ala
225 230 235 240

Arg Phe His Leu Glu Arg Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr
245 250 255

Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp Ile Ser Phe Trp Ile
260 265 270

Asn Met Asp Ala Ala Pro Ala Arg Val Gly Leu Gly Ile Thr Thr Val
275 280 285

Leu Thr Met Thr Thr Gln Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys
290 295 300

Val Ser Tyr Val Lys Ala Ile Asp Ile Trp Met Ala Val Cys Leu Leu
305 310 315 320

Phe Val Phe Ser Ala Leu Leu Glu Tyr Ala Ala Val Asn Phe Val Ser
325 330 335

Arg Gln His Lys Glu Leu Leu Arg Phe Arg Arg Lys Arg Arg His His
340 345 350

Lys Glu Asp Glu Ala Gly Glu Gly Arg Phe Asn Phe Ser Ala Tyr Gly
355 360 365

Met Gly Pro Ala Cys Leu Gln Ala Lys Asp Gly Ile Ser Val Lys Gly
370 375 380

Ala Asn Asn Ser Asn Thr Thr Asn Pro Pro Pro Ala Pro Ser Lys Ser
385 390 395 400

Pro Glu Glu Met Arg Lys Leu Phe Ile Gln Arg Ala Lys Lys Ile Asp
405 410 415

Lys Ile Ser Arg Ile Gly Phe Pro Met Ala Phe Leu Ile Phe Asn Met
420 425 430

Phe Tyr Trp Ile Ile Tyr Lys Ile Val Arg Arg Glu Asp Val His Asn
435 440 445

Gln

<210> 11
<211> 465
<212> PRT
<213> Homo sapiens

<400> 11

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Met Ala His Val Arg His Phe Arg Thr Leu Val Ser Gly Phe Tyr Phe
1               5                  10                  15

Trp Glu Ala Ala Leu Leu Leu Ser Leu Val Ala Thr Lys Glu Thr Asp
            20                  25                  30

Ser Ala Arg Ser Arg Ser Ala Pro Met Ser Pro Ser Asp Phe Leu Asp
        35                  40                  45

Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro Asn
    50                  55                  60

Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn Ser
65                  70                  75                  80

Phe Gly Ser Ile Ala Glu Thr Thr Met Asp Tyr Arg Val Asn Ile Phe
                85                  90                  95

Leu Arg Gln Lys Trp Asn Asp Pro Arg Leu Ala Tyr Ser Glu Tyr Pro
            100                 105                 110

Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp Lys
        115                 120                 125

Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Glu Val
    130                 135                 140

Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe Lys Asn Gly Asn Val Leu
145                 150                 155                 160

Tyr Ser Ile Arg Leu Thr Leu Thr Leu Ser Cys Pro Met Asp Leu Lys
                165                 170                 175

Asn Phe Pro Met Asp Val Gln Thr Cys Ile Met Gln Leu Glu Ser Phe
            180                 185                 190

Gly Tyr Thr Met Asn Asp Leu Ile Phe Glu Trp Gln Asp Glu Ala Pro
        195                 200                 205

Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Leu Leu Lys Glu
    210                 215                 220

Glu Lys Asp Leu Arg Tyr Cys Thr Lys His Tyr Asn Thr Gly Lys Phe
225                 230                 235                 240

Thr Cys Ile Glu Val Arg Phe His Leu Glu Arg Gln Met Gly Tyr Tyr
                245                 250                 255

Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser Trp
            260                 265                 270

Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Ala Leu
        275                 280                 285

Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser Arg
    290                 295                 300
```

```
Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp Met
305                 310                 315                 320

Ala Val Cys Leu Leu Phe Val Phe Ser Ala Leu Leu Glu Tyr Ala Ala
                325                 330                 335

Val Asn Phe Val Ser Arg Gln His Lys Glu Leu Leu Arg Phe Arg Arg
            340                 345                 350

Lys Arg Lys Asn Lys Thr Glu Ala Phe Ala Leu Glu Lys Phe Tyr Arg
        355                 360                 365

Phe Ser Asp Met Asp Asp Glu Val Arg Glu Ser Arg Phe Ser Phe Thr
    370                 375                 380

Ala Tyr Gly Met Gly Pro Cys Leu Gln Ala Lys Asp Gly Met Thr Pro
385                 390                 395                 400

Lys Gly Pro Asn His Pro Val Gln Val Met Pro Lys Ser Pro Asp Glu
                405                 410                 415

Met Arg Lys Val Phe Ile Asp Arg Ala Lys Lys Ile Asp Thr Ile Ser
            420                 425                 430

Arg Ala Cys Phe Pro Leu Ala Phe Leu Ile Phe Asn Ile Phe Tyr Trp
        435                 440                 445

Val Ile Tyr Lys Ile Leu Arg His Glu Asp Ile His His Gln Gln Gln
    450                 455                 460

Asp
465
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<210> 12
<211> 337
<212> PRT
<213> Mus musculus

<220>
<221> UNSURE
<222> (322)..(322)
<223> wherein "X" is any amino acid.

<400> 12

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Val Ala Leu Ala Lys Glu Asp Val Lys Ser Gly Leu Lys Gly Ser Gln
1               5                   10                  15

Pro Met Ser Pro Ser Asp Phe Leu Asp Lys Leu Met Gly Arg Thr Ser
            20                  25                  30

Gly Tyr Asp Ala Arg Ile Arg Pro Asn Phe Lys Gly Pro Pro Val Asn
        35                  40                  45

Val Thr Cys Asn Ile Phe Ile Asn Ser Phe Gly Ser Val Thr Glu Thr
```

```
    50                  55                  60

Thr Met Asp Tyr Arg Val Asn Val Phe Leu Arg Gln Gln Trp Asn Asp
65                  70                  75                  80

Pro Arg Leu Ala Tyr Arg Glu Tyr Pro Asp Asp Ser Leu Asp Leu Asp
                85                  90                  95

Pro Ser Met Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe Ala Asn
            100                 105                 110

Glu Lys Gly Ala Asn Phe His Glu Val Thr Thr Asp Asn Lys Leu Leu
        115                 120                 125

Arg Ile Phe Lys Asn Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu
    130                 135                 140

Ile Leu Ser Cys Pro Met Asp Leu Lys Asn Phe Pro Met Asp Ile Gln
145                 150                 155                 160

Thr Cys Thr Met Gln Leu Glu Ser Phe Gly Tyr Thr Met Asn Asp Leu
                165                 170                 175

Met Phe Glu Trp Leu Glu Asp Ala Pro Ala Val Gln Val Ala Glu Gly
            180                 185                 190

Leu Thr Leu Pro Gln Phe Ile Leu Arg Asp Glu Lys Asp Leu Gly Tyr
        195                 200                 205

Cys Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu Val Lys
    210                 215                 220

Phe His Leu Glu Arg Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile
225                 230                 235                 240

Pro Ser Leu Leu Ile Val Ile Leu Ser Trp Val Ser Phe Trp Ile Asn
                245                 250                 255

Met Asp Ala Ala Pro Ala Arg Val Gly Leu Gly Ile Thr Thr Val Leu
            260                 265                 270

Thr Met Thr Thr Gln Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys Val
        275                 280                 285

Ser Tyr Val Lys Ala Ile Asp Ile Trp Met Ala Val Cys Leu Leu Phe
    290                 295                 300

Val Phe Ala Ala Leu Leu Glu Tyr Ala Ala Val Asn Phe Val Ser Arg
305                 310                 315                 320

Gln Xaa Lys Glu Phe Met Arg Leu Arg Arg Arg Gln Arg Arg Gln Arg
                325                 330                 335

Met
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<210> 13

<211> 452
<212> PRT
<213> Homo sapiens

<400> 13

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Met Asn Arg Gln Leu Val Asn Ile Leu Thr Ala Leu Phe Ala Phe Phe
1               5                  10                  15

Leu Glu Thr Asn His Phe Arg Thr Ala Phe Cys Lys Asp His Asp Ser
            20                  25                  30

Arg Ser Gly Lys Gln Pro Ser Gln Thr Leu Ser Pro Ser Asp Phe Leu
        35                  40                  45

Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp Ala Arg Ile Arg Pro
    50                  55                  60

Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
65                  70                  75                  80

Ser Phe Gly Ser Val Thr Glu Thr Thr Met Asp Tyr Arg Val Asn Ile
                85                  90                  95

Phe Leu Arg Gln Gln Trp Asn Asp Ser Arg Leu Ala Tyr Ser Glu Tyr
            100                 105                 110

Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met Leu Asp Ser Ile Trp
        115                 120                 125

Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly Ala Asn Phe His Asp
    130                 135                 140

Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Ser Lys Asn Gly Lys Val
145                 150                 155                 160

Leu Tyr Ser Ile Arg Leu Thr Leu Thr Leu Ser Cys Pro Met Asp Leu
                165                 170                 175

Lys Asn Phe Pro Met Asp Val Gln Thr Cys Thr Met Gln Leu Glu Ser
            180                 185                 190

Phe Gly Tyr Thr Met Asn Asp Leu Ile Phe Glu Trp Leu Ser Asp Gly
        195                 200                 205

Pro Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln Phe Ile Leu Lys
    210                 215                 220

Glu Glu Lys Glu Leu Gly Tyr Cys Thr Lys His Tyr Asn Thr Gly Lys
225                 230                 235                 240

Phe Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg Gln Met Gly Tyr
                245                 250                 255

Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val Ile Leu Ser
            260                 265                 270
```

```
Trp Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro Ala Arg Val Ala
        275                 280                 285

Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser Gly Ser
    290                 295                 300

Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala Ile Asp Ile Trp
305                 310                 315                 320

Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu Tyr Ala
                325                 330                 335

Ala Val Asn Phe Val Ser Arg Gln His Lys Glu Phe Leu Arg Leu Arg
            340                 345                 350

Arg Arg Gln Lys Arg Gln Asn Lys Glu Glu Asp Val Thr Arg Glu Ser
        355                 360                 365

Arg Phe Asn Phe Ser Gly Tyr Gly Met Gly His Cys Leu Gln Val Lys
    370                 375                 380

Asp Gly Thr Ala Val Lys Ala Thr Pro Ala Asn Pro Leu Pro Gln Pro
385                 390                 395                 400

Pro Lys Asp Gly Asp Ala Ile Lys Lys Lys Phe Val Asp Arg Ala Lys
                405                 410                 415

Arg Ile Asp Thr Ile Ser Arg Ala Ala Phe Pro Leu Ala Phe Leu Ile
            420                 425                 430

Phe Asn Ile Phe Tyr Trp Ile Thr Tyr Lys Ile Ile Arg His Glu Asp
        435                 440                 445

Val His Lys Lys
    450
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<210> 14
<211> 298
<212> PRT
<213> homo sapiens

<400> 14

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Pro Ser Asp Phe Leu Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp
1               5                   10                  15

Ala Arg Ile Arg Pro Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys
            20                  25                  30

Asn Ile Phe Ile Asn Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp
        35                  40                  45

Tyr Arg Val Asn Val Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu
    50                  55                  60

Ser Tyr Arg Glu Tyr Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met
65                  70                  75                  80
```

```
Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly
                85                  90                  95

Ala Asn Phe His Glu Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe
            100                 105                 110

Lys Asn Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser
        115                 120                 125

Cys Leu Met Asp Leu Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr
    130                 135                 140

Met Gln Leu Glu Ser Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
145                 150                 155                 160

Trp Leu Glu Asp Ala Pro Ala Val Gln Val Ala Glu Gly Leu Thr Leu
                165                 170                 175

Pro Gln Phe Ile Leu Arg Asp Glu Lys Asp Leu Gly Cys Cys Thr Lys
            180                 185                 190

His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu Val Lys Phe His Leu
        195                 200                 205

Glu Arg Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu
    210                 215                 220

Leu Ile Val Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met Asp Ala
225                 230                 235                 240

Ala Pro Ala Arg Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr
                245                 250                 255

Thr Gln Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val
            260                 265                 270

Lys Ala Ile Asp Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala
        275                 280                 285

Ala Leu Leu Glu Tyr Ala Ala Ile Asn Phe
    290                 295

<210>  15
<211>  312
<212>  PRT
<213>  homo sapiens

<400>  15

Pro Ser Asp Phe Leu Asp Lys Leu Met Gly Arg Thr Ser Gly Tyr Asp
1               5                   10                  15

Ala Arg Ile Arg Pro Asn Phe Lys Gly Pro Pro Val Asn Val Thr Cys
            20                  25                  30

Asn Ile Phe Ile Asn Ser Phe Ser Ser Val Thr Lys Thr Thr Met Asp
```

```
        35                  40                  45

Tyr Arg Val Asn Val Phe Leu Arg Gln Gln Trp Asn Asp Pro Arg Leu
    50                  55                  60

Ser Tyr Arg Glu Tyr Pro Asp Asp Ser Leu Asp Leu Asp Pro Ser Met
65                  70                  75                  80

Leu Asp Ser Ile Trp Lys Pro Asp Leu Phe Phe Ala Asn Glu Lys Gly
                85                  90                  95

Ala Asn Phe His Glu Val Thr Thr Asp Asn Lys Leu Leu Arg Ile Phe
            100                 105                 110

Lys Asn Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu Ser
        115                 120                 125

Cys Leu Met Asp Leu Lys Asn Phe Pro Met Asp Ile Gln Thr Cys Thr
    130                 135                 140

Met Gln Leu Glu Ser Ser Ser Ile Leu Cys Ser Pro Leu Pro Ser Leu
145                 150                 155                 160

Ser Leu Ser Val Gly Tyr Thr Met Lys Asp Leu Val Phe Glu Trp Leu
                165                 170                 175

Glu Asp Ala Pro Ala Val Gln Val Ala Glu Gly Leu Thr Leu Pro Gln
            180                 185                 190

Phe Ile Leu Arg Asp Glu Lys Asp Leu Gly Cys Cys Thr Lys His Tyr
        195                 200                 205

Asn Thr Gly Lys Phe Thr Cys Ile Glu Val Lys Phe His Leu Glu Arg
    210                 215                 220

Gln Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile
225                 230                 235                 240

Val Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met Asp Ala Ala Pro
                245                 250                 255

Ala Arg Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln
            260                 265                 270

Ser Ser Gly Ser Arg Ala Ser Leu Pro Lys Val Ser Tyr Val Lys Ala
        275                 280                 285

Ile Asp Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu
    290                 295                 300

Leu Glu Tyr Ala Ala Ile Asn Phe
305                 310
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<210> 16
<211> 13
<212> PRT
<213> homo sapiens

<400> 16

Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr Pro Asp Asp
1 5 10

<210> 17
<211> 13
<212> PRT
<213> homo sapiens

<400> 17

Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu
1 5 10

<210> 18
<211> 13
<212> PRT
<213> homo sapiens

<400> 18

Glu Ser Phe Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
1 5 10

<210> 19
<211> 13
<212> PRT
<213> homo sapiens

<400> 19

Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu
1 5 10

<210> 20
<211> 13
<212> PRT
<213> homo sapiens

<400> 20

Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 21
<211> 12
<212> PRT
<213> homo sapiens

<400> 21

Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 22

<211> 14
<212> PRT
<213> homo sapiens

<400> 22

Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
1 5 10

<210> 23
<211> 27
<212> PRT
<213> homo sapiens

<400> 23

Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val
1 5 10 15

Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met
20 25

<210> 24
<211> 18
<212> PRT
<213> homo sapiens

<400> 24

Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser
1 5 10 15

Gly Ser

<210> 25
<211> 24
<212> PRT
<213> homo sapiens

<400> 25

Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu
1 5 10 15

Tyr Ala Ala Ile Asn Phe Val Ser
20

<210> 26
<211> 27
<212> PRT
<213> homo sapiens

<400> 26

Met Gly Tyr Tyr Leu Ile Gln Met Tyr Ile Pro Ser Leu Leu Ile Val
1 5 10 15

Ile Leu Ser Trp Val Ser Phe Trp Ile Asn Met
20 25

<210> 27
<211> 18
<212> PRT
<213> homo sapiens

<400> 27

Val Gly Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Gln Ser Ser
1 5 10 15

Gly Ser

<210> 28
<211> 24
<212> PRT
<213> homo sapiens

<400> 28

Ile Trp Met Ala Val Cys Leu Leu Phe Val Phe Ala Ala Leu Leu Glu
1 5 10 15

Tyr Ala Ala Ile Asn Phe Val Ser
20

<210> 29
<211> 14
<212> PRT
<213> homo sapiens

<400> 29

Lys Gly Pro Pro Val Asn Val Thr Cys Asn Ile Phe Ile Asn
1 5 10

<210> 30
<211> 13
<212> PRT
<213> homo sapiens

<400> 30

Asn Asp Pro Arg Leu Ser Tyr Arg Glu Tyr Pro Asp Asp
1 5 10

<210> 31
<211> 13
<212> PRT
<213> homo sapiens

<400> 31

Gly Asn Val Leu Tyr Ser Ile Arg Leu Thr Leu Ile Leu
1 5 10

<210> 32
<211> 13
<212> PRT
<213> homo sapiens

<400> 32

Leu Ser Val Gly Tyr Thr Met Lys Asp Leu Val Phe Glu
1 5 10

<210> 33
<211> 13
<212> PRT
<213> homo sapiens

<400> 33

Thr Lys His Tyr Asn Thr Gly Lys Phe Thr Cys Ile Glu
1 5 10

<210> 34
<211> 13
<212> PRT
<213> homo sapiens

<400> 34

Leu Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 35
<211> 12
<212> PRT
<213> homo sapiens

<400> 35

Arg Glu Gly Glu Thr Thr Arg Lys Leu Tyr Val Asp
1 5 10

<210> 36
<211> 8
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<213> bacteriophage T7

<400> 36

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 37
<211> 733
<212> DNA
<213> homo sapiens

<400> 37
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aattcgaggg tgcaccgtca gtcttcctct tccccccaaa acccaaggac accctcatga 120

tctcccggac tcctgaggtc acatgcgtgg tggtggacgt aagccacgaa gaccctgagg 180

tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240

aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300

ggctgaatgg caaggagtac aagtgcaagg tctccaacaa agccctccca acccccatcg 360

agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420

catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480

atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga 540

ccacgcctcc cgtgctggac tccgacggct ccttcttcct ctacagcaag ctcaccgtgg 600

acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc 660

acaaccacta cacgcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc 720

gactctagag gat 733

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<213> Homo sapiens

<400> 38
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<400> 39
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<210> 40
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<400> 40
gaggtgcagc tggtggagtc tgg 23

<210> 41

<211> 23
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<400> 41
caggtgcagc tgcaggagtc ggg 23

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<210> 45
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<400> 45
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<400> 46
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<210> 47
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<400> 47
tgaggagacg gtgaccgtgg tccc 24

<210> 48
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<400> 48
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<400> 50
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<400> 51
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<400> 52
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<400> 55
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<211> 23
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<211> 23
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<400> 57
tcctatgtgc tgactcagcc acc 23

<210> 58
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<400> 58
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<212> DNA
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cacgttatac tgactcaacc gcc 23

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caggctgtgc tcactcagcc gtc 23

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<400> 61
aattttatgc tgactcagcc cca 23

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<211> 24
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<400> 62
acgtttgatt tccaccttgg tccc 24

<210> 63
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<212> DNA
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<400> 63
acgtttgatc tccagcttgg tccc 24

<210> 64
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acgtttgata tccactttgg tccc 24

<210> 65
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acgtttgatc tccaccttgg tccc 24

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acgtttaatc tccagtcgtg tccc 24

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<400> 67
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<210> 68
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cagtctgccc tgactcagcc tgc 23

<210> 69
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<400> 69
tcctatgtgc tgactcagcc acc 23

<210> 70
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tcttctgagc tgactcagga ccc 23

<210> 71
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<400> 71
cacgttatac tgactcaacc gcc 23

<210> 72
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<400> 72
caggctgtgc tcactcagcc gtc 23

<210> 73
<211> 23
<212> DNA
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<400> 73
aattttatgc tgactcagcc cca 23

<210> 74
<211> 16
<212> PRT
<213> Homo sapiens

<400> 74

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1 5 10 15

<210> 75
<211> 21
<212> DNA
<213> Homo sapiens

<400> 75
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<210> 76
<211> 23
<212> DNA
<213> Homo sapiens

<400> 76
gatcctgcca ccatgctagt taa 23

<210> 77
<211> 30
<212> DNA
<213> Homo sapiens

<400> 77
ctggtctcag aaatattcgt tccgttccct 30

<210> 78
<211> 39
<212> DNA
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<400> 78
gcagcagcgg ccgcgagagc tcatccatac tctgcagcc 39

<210> 79
<211> 35
<212> DNA
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